

# MISSOURI. Conservationist

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# Below the Surface

The foundation of my interest in nature and outdoor pursuits formed in early childhood. I can glimpse portions of it through memories of my father's steadying hand as I stepped into a boat the first time,

swimming in a creek to the hum of cicadas and the satisfaction of finally outsmarting a squirrel and bringing it home for dinner. In the beginning I focused on the object of attention, such as a rabbit as it sprinted for a briar patch, and not so much about where the rabbit came from or where it was going or how it connected with other wildlife.

Things changed one spring day as I fished a small stream. I moved above a riffle and cast into a deep and promising pool. My eyes were on the bobber but the sun was just right, the water crystal, and a world previously overlooked came into view. I saw scatterings of rooted plants and others drifting about, snails, a turtle hugging the gravel, suckers suspended motionless off the bottom, clouds of minnows and sunfish peacefully ignoring the bait I offered. It was a moment in which the sum total of what I saw connected in a way that exceeded my previous understanding. For the first time I looked below the surface and saw that a stream was more than the source of fish I was trying to catch. I marveled at the aquatic community and wanted to know more.

That was the beginning of my serious interest in the natural world and my effort to look deeper than what attracted my immediate attention. There were many more fishing, hunting, hiking and other outdoor trips. I didn't always see connections as dramatically as in that stream, but I eventually had similar realizations with forests, prairies and other natural communi-

ties. Neither did I know the drive to understand would lead to formal education and what has been a most gratifying 34-year career with the Conservation Department.

I now know that there are distinct plant and animal communities within each stream, prairie and forest and that these fit within larger natural systems (ecosystems) like pieces in a puzzle. I also learned that efforts to improve fish, forest and wildlife resources are most successful when done in concert with the habitat suited to the site and natural system in which the land is located. Whether simply interested in knowing more about the natural world or

in managing a farm or other land, a good step is to learn about the appropriate natural system and apply that knowledge to the plants and animals found there. For an overview of Missouri's ecoregions, see the October 2005 issue of the *Conservationist* or go online at [www.MissouriConservation.org/conmag/2005/10/](http://www.MissouriConservation.org/conmag/2005/10/).

I still find wonder in nature, haven't stopped learning and hope the door stays open the rest of my life. It isn't necessary to pursue a conservation career to appreciate and enjoy the web of life in the Missouri outdoors. All it takes is opportunity and the willingness to look with a patient and observant eye. If you do that, then I'm confident that interest will draw you deeper.

Bill McGuire, private land services division chief



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**OUR MISSION:** *To protect and manage the fish, forest and wildlife resources of the state; to serve the public and facilitate their participation in resource management activities; and to provide opportunity for all citizens to use, enjoy and learn about fish, forest and wildlife resources.*

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Cover and left: monarch butterflies by Noppadol Paothong. To learn more about the life cycle of the monarch, read *Majestic Monarchs*, starting on Page 14.

### NextGEN

This section reports on goals established in *The Next Generation of Conservation*. To read more about this plan, visit [www.MissouriConservation.org/12843](http://www.MissouriConservation.org/12843).

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the Conservation Department and the constant battle to see that our natural world is as well-preserved, well-maintained and as healthy as possible.

*Robert Savage, Ellisville*

I am so impressed with the photos and accompanying article by Noppadol Paothong in the July issue. I often wonder how photographers get those great close-ups of insects and wildlife, and he offered a snapshot into the nature photographer's world. I will never photograph the way he does, but my interest in wildlife, especially the insect world, draws me to this type of photography. I especially appreciated the photo of the preying mantis eating the bee. She seemed to be peering at the photographer, wondering what in the world he was looking at.

*Cathy Edmond, St. Louis*

## WILD IMAGES

Noppadol Paothong's article in the July issue [*Backyard Wildlife*] is spot

on regarding wildlife in one's backyard. Our house backs to woods, which then adjoin one corner of a large preservation area. As a result, we have plentiful wildlife, and I rarely miss an opportunity to try photographing them.

Red foxes, grey foxes, turkeys, deer (of course), various birds including raptors, a residential pair of great horned owls, and the occasional barred owl, bats, opossums, raccoons, turtles, snakes, skinks, nearly all have come under the scrutiny of my own lens, though certainly not of the quality of Mr. Paothong's photos. Two coyotes have been seen in our yard, as well.

I even saw once, a cicada killer wasp, cicada in her grasp, climbing up a maple tree with her prey. I was unable to get a photo, but watched as long as possible, until the wasp dropped the cicada and flew off. Later, the cicada was gone, so I assume the wasp returned and continued her journey up the tree to her nest, where the cicada would be food for her young.

I'm not a Missouri native, having moved to the St. Louis area from Florida nearly 11 years

ago, but I love the area and the seasons. I grew up in a very rural atmosphere, and the fact that we have plentiful wildlife in our backyard is a bit of a return to that feeling of closeness to nature that seems missed by so many who dwell in suburbia, or in urban areas where wildlife is perhaps less abundant and diverse.

*Missouri Conservationist* has been a wonderful guide to the many species of flora and fauna in the area, and I've learned so very much from this magazine regarding the excellent work of



## TUMBLE BUG'S TREASURE

When reading the answer to the tumble bug question in the section "Ask the Ombudsman" in the June issue, I was reminded of my first (and only) encounter with one.

My two young sons and I were taking a walk down a dirt road when one of them spotted this beetle that seemed to be pushing something. I bent over and got a closer look. I didn't know exactly what it was the bug was pushing, all I knew is that it seemed to be such a big task at the slow rate the beetle was moving it. I decided to help him out by picking up this ball of something with the beetle still clung to it, and I crossed the road with it in the same direction the beetle was headed. I placed it down gently, with my boys watching intently, and felt as though I had done my good deed for the day!

We got back to the house where my husband listened to the boys tell the story of finding the beetle and of mom helping it by picking it up and carrying it over to the other side of the road. My husband, with a grin on his face, asked me if I knew what the beetle's ball was. I told him I had no idea, and then he told me it was cow poop! Well, you can imagine the laughing that took place between my husband and my two sons! (And I immediately washed my hands!)

*Kelly Potter, via Internet*



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**Reader Photo**

**CREATURE CURIOSITY**

Karen Planalp of St. Joseph captured this image of a raccoon in her yard. It was one of a trio of young raccoons she had seen. "Although we live in the city," said Planalp, "we have a water source surrounding our property with extremely large 100-year-old trees. The wildlife thrives." Planalp reports seeing deer, turtles, rabbits, owls, raccoons, opossum, blue birds, cardinals, woodpeckers and a variety of butterflies on her property.



# ASK THE OMBUDSMAN

**Q:** In the booklet *A Summary of Missouri Fishing Regulations*, there is a reference to “Pools 20–26” on the Mississippi River. What does “Pools 20–26” mean and where are they?

**A:** From St. Louis north (upstream), there are a series of locks and dams on the Mississippi River. The pools refer to the water that is impounded by the locks and dams. For example, Pool 26 is the stretch of the river upstream of Lock and Dam No. 26 near Alton, Ill. It extends north to Lock and Dam No. 25, near Winfield, Mo. Upriver of Lock and Dam No. 25 is Pool 25. You can see the locks and dams on the Missouri State Highway Map. “Pools 20–26” is that stretch of the river from Alton, Ill. to Keokuk, Iowa.

**Q:** Can you tell me how to use purple paint to post my property against trespassing?

**A:** That method of posting is described in Missouri Statute No. 569.145. It calls for the placing of purple paint marks on trees or posts around the area to be posted. There is no specific shade of purple that is required, but I



Purple paint to post private property against trespassing

JIM RATHERT

would describe most of what I’ve seen as a “plum” color. Each mark should be a vertical line of 8 inches in length and the bottom of the mark must be between 3 and 5 feet off the ground. The marks should be no more than 100 ft. apart and should be readily visible to persons approaching the property. Unauthorized entry is trespass in the first degree, and a class B misdemeanor.

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at [Ombudsman@mdc.mo.gov](mailto:Ombudsman@mdc.mo.gov).

## TIME CAPSULE

### September 1959

*The Story of the Mourning Dove* was written by W.O. Nagel about a movie made by the Conservation Department on doves. Charles W. Schwartz directed and photographed the 36-minute movie. A dove can lay two to three eggs per clutch and can average four broods in a season. After hatching, the parents remove the egg shells from the nest to avoid attracting predators. The young doves are fed by both parents who produce a “rich, semi-liquid food in the crop, called pigeon milk.” By 11 or 12 days the youngster is about ready to fly on its own while the adult is “brooding” a new clutch. — Contributed by the Circulation staff





Species of Concern

**Western Chicken Turtle**



**Species of Concern:** Western Chicken Turtle  
**Scientific name:** *Deirochelys reticularia miaria*  
**Distribution:** Extreme southeastern Missouri  
**Classification:** State Endangered  
**To learn more about endangered species:** [www.MissouriConservation.org/8227](http://www.MissouriConservation.org/8227)

**T**HESE CRITICALLY IMPERILED reptiles get their name from their long, chicken-like neck. That long neck helps them catch invertebrates, such as dragonfly and damselfly larvae, crayfish and fishing spiders. The Show-Me State is at the northern edge of this species' geographic distribution, so it probably never was common outside the Bootheel Region. Even there, however, its numbers have declined. Draining of the region's vast historic wetlands and removal of Missouri's historic cypress bottomland forest have reduced the species' habitat to a fraction of its original extent. Non-point water pollution makes remaining wetlands less habitable, too. The Western chicken turtle's best chance of survival lies in preservation or restoration of bottomland hardwood forests and associated still waters of permanent and temporary wetlands. The value of existing habitat can be enhanced by providing downed trees and other places where these turtles can safely bask in the sun. Protecting existing bottomland hardwood forest from water pollution is another important protective measure.

PHOTO: JEFF BRIGGLER; ART: MARK RAITHEL

**Bobwhites on a Budget**

*6 quail management tips that let you do more with less.*

**S**hort of cash? Follow these cost-saving quail management tips to improve habitat on your land:

1. Cut food plots in half and reduce seeding by half to encourage seed-producing weeds.
2. Burn. Prescribed fire is the most cost-effective quail management tool.
3. Reduce mowing. This saves money and preserves quail nests.
4. Forget quail stocking and predator control. They don't work.
5. Share equipment, supplies and work with neighbors.
6. Work with existing shrubs, instead of buying plants.



For more detailed advice, visit [www.MissouriConservation.org/19968](http://www.MissouriConservation.org/19968).

**Nuts to You!**

*Nature has a backup system for this crucial wildlife food.*

**T**o you, acorns may be nuts, but to wildlife biologists they are "hard mast." Technically, this includes any long-lasting tree fruit, from soft-shelled pecans to rock-hard hickory and walnuts. But for Missouri wildlife, hard mast mostly means the fruit of oak trees. Trees in the white oak group produce acorns the same year they set fruit. Acorns from red oaks (which have pointy leaves) take two growing seasons to mature. The difference builds a certain amount of stability into this important wildlife food source. If a late frost nips white oak flowers, red oak acorns that started growing the previous year fill the gap. When the red oak crop fails, chances are white oaks will be available.





NextGEN

## Dove Hunting Abounds

*Choose from more than 800 public fields this season.*

Looking for a place to hunt during Missouri's 70-day dove season? Visit [www.MissouriConservation.org/7469](http://www.MissouriConservation.org/7469) and take your pick of 800 specially managed dove fields on approximately 100 conservation areas statewide. Maps also are available from Conservation Department regional offices (see Page 3). Most conservation areas have sunflower or other agricultural crop fields that provide excellent forage for doves and other upland birds. These dove magnets also draw lots of hunters, so mind your manners, and keep safety foremost in mind. Stand at least 50 yards from other hunters, and pass up shots that are not at least 45 degrees above the horizon.



the myths and mysteries of Grimm Brothers classics with kids' natural gift for fantasy. The result is relaxed, unstructured outdoor fun. Call 816-228-3766 for details.

## Burr Oak Woods

*Fall programs are packed with action for the whole family.*

Fall means family fun at Burr Oak Woods Conservation Nature Center in Blue Springs. Sample program offerings from the Conservation Department's popular outdoor skills workshop series at a Discover Nature—Family open house from 6 to 8:30 p.m. Sept. 15. Burr Oak Woods will host a family fishing program from 9 to 11 a.m. and an all-day "Deer Hunting 101" class for deer hunters 11 and older on Sept. 26. Teachers won't want to miss the Project Learning Tree teacher training from 9 a.m. to 4 p.m. Sept. 14. The big autumn event is the Fairy Tale Trail Oct. 16 and 17. On those two days, kids can meet real, live fairy tale characters along the Missouri Tree Trail. The event mixes



## GET ON THE TRAIL FOR HUNTING SEASON



EAST-CENTRAL MISSOURI hunters who need to check sight alignment and hone shooting skills have the perfect place to do so at Indian Trail Conservation Area. Located just off Highway 19 between Steelville and

Salem in Dent County, this forested 13,503-acre area has one of the nicest unstaffed shooting ranges in the state. With three shooting benches each at 25, 50, 100 and 200 yards, it can accommodate every type of rifle and pistol shooter. Range hours are one-half hour after sunrise until one-half hour before sunset. The range is closed until noon each Monday for cleaning and maintenance. Targets, pushpins and target holders are provided. There are no facilities for shotgunning. Only single-projectile firearms are allowed on the range. Indian Trail CA also has primitive camping sites and a picnic area. The area also offers walk-in/backpack camping, where people wanting even more of a primitive experience may walk into the interior of the area and set up a tent. It has no trails, but it does have 55 miles of walkable interior gravel roads. For more information, call 573-729-3182 or visit [www.MissouriConservation.org/a6201](http://www.MissouriConservation.org/a6201)

RANGE: MIKE FIAONI; BURR OAK: NOPPADOL PAOTHONG



## TAKING ACTION

*New Commissioner Don C. Bedell*

“I REMEMBER SPENDING every summer as a kid with my grandparents on the Current River catching grasshoppers and whatever else we could get our hands on, and fishing for goggle-eye or whatever we could catch,” recalls the Missouri Conservation Commission’s newly appointed commissioner Don Bedell. “I’ve always had a love for the outdoors. I’ve duck hunted all of my life, since I was big enough to carry a shotgun. And now I’ll be able to help the people of Missouri make sure the outdoors we love will be here for our kids and grandkids and their grandkids.”



Gov. Jay Nixon announced the appointment of the 68-year-old Sikeston businessman and longtime conservationist on July 30 for a term that expires July 1, 2015. Bedell will fill the role of Commissioner Lowell Mohler whose term expired July 1.

Bedell brings a depth and breadth of experience to the Commission. In addition to being an accomplished businessman who has founded more than 100 companies and has sat on numerous boards of directors, he is an avid conservationist and enthusiastic sportsman. He is a Life Sponsor of Ducks Unlimited, a Life Member of Quail Unlimited, Inc., a Sustaining Member of the Conservation Federation of Missouri, a Diamond Sponsor of the National Wild Turkey Federation and a Life Member of Safari Club International.

“From overwhelmingly supporting the constitutional amendment that created the agency back in 1936 to passing the sales-tax funding in 1976, it speaks well of the people of Missouri that they are leaders in the efforts to provide the funding and resources necessary for the Department to do the work it needs to do.” He adds, “Through my experiences of being on boards and working with a great variety of people, I believe I can reach out to people for their ideas, take an in-depth look into things and provide a different perspective.”

Bedell served at his first Commission meeting on Aug. 13 and 14 at the Department headquarters in Jefferson City. Bedell’s appointment to the Conservation Commission is subject to confirmation by the Missouri Senate.

Current commissioners are William “Chip” McGeehan of Marshfield, Don Johnson of St. Louis and Becky Plattner of Grand Pass.

Missouri voters established the Conservation Commission with Constitutional Amendment 4 through the initiative petition process in 1936. Under that amendment, the governor appoints commissioners to six-year terms. No more than two commissioners may be from the same political party. The commission carries out duties associated with the control, management, restoration, conservation and regulation of the bird, fish, game, forestry and all wildlife resources of the state.

## No MOre Trash! Needs You

*Help us work toward a litter-free state.*

In April, Missourians picked up 111,134 bags of trash—plus numerous truckloads of items too large to fit into bags—as part of the annual No MOre Trash! Bash. It was an amazing citizen effort. However, litter is a year-round problem and the success of No MOre Trash! depends most on citizens’ everyday choices and volunteer clean-up groups.

The No MOre Trash! campaign is a litter-prevention partnership of the Missouri departments of Conservation and Transportation and thousands of volunteers. Litter poses health risks, harms water quality and wildlife habitat, is associated with increased crime, creates an ugly and disheartening environment, and costs lots of money and time to clean up.

The Missouri Department of Transportation spends \$5.8 million annually to clean litter from Missouri highways, money that would be better spent improving Missouri roads. Adopt-A-Highway volunteers provide another \$1 million worth of litter pickup, and Missouri Stream Teams pick up tons of trash from rivers and streams every year. Litter is a serious problem in Missouri, and we need your help to keep our state clean and our habitats healthy.

You can pitch in by setting a good example for others by not littering and by discouraging others from littering. You can also conduct a cleanup or educational program to educate your community about the damage caused by littering, or become an Adopt-A-Highway or Stream Team volunteer.

To learn more about the No MOre Trash! program and how you can help, visit [www.nomoretrash.org](http://www.nomoretrash.org) or call, toll free, 888-ASK-MODOT (275-6636).





NextGEN

## Squirrels for Deer

*Set your sights on squirrels to hone your hunting skills.*

Opening day morning of the deer season often catches hunters unprepared. Hunting skills, such as awareness, stealth and the ability to sit motionless, require practice to remain at their peak. You will likely become a better hunter as the season progresses, but that doesn't help when a big deer approaches a few minutes into opening day morning.

Squirrel hunting will improve your hunting skills in time for the deer season. Wild squirrels aren't like the ones that visit your backyard bird feeders. They are wily, and will hide or scurry at any hint of danger. You'll need to watch, listen, move quietly or sit still, just as you would for deer, and because they are numerous you'll get plenty of opportunities to practice. Use a .22 rifle and you'll improve your shooting skills, as well.

The season lasts many months, allowing you to pick good weather days for your outings. Early morning or late afternoons are best, just as they are for deer hunting. A nice difference, however, is that you'll often have the woods to yourself. Use the time to explore. You should be able to find deer trails and crossings that will pay off in deer season.

Bring the kids along to kindle their hunting spirit and improve their hunting skills. They'll also learn how being a good hunter translates into providing wholesome food for the family table.



## Lost Valley Hatchery

## Scout it Out



**Name:** Lost Valley Fish Hatchery

**Location:** East of Highway 65 on County Road 620, northeast of Warsaw in Benton County.

**For more info:** [www.MissouriConservation.org/a8930](http://www.MissouriConservation.org/a8930)



NO NEED TO ask where fish come from after visiting Lost Valley Fish Hatchery, one of the largest and most modern fish hatcheries in the nation. Most Missouri fish reproduce on their own, but it's amazing what a boost their populations can receive from a high-tech hatchery complex that includes 78 rearing ponds, 15 miles of pipe and a sophisticated water monitoring system. Lost Valley is a warm-water hatchery that raises prodigious numbers of walleye, white bass/striped bass hybrids and catfish to seed or supplement Missouri lakes, ponds and streams. Raising fish to sizes suitable for stocking is a long process that usually starts with collecting and spawning eggs and requires feeding, treating and monitoring fish stocks, counting and tagging fish and hauling them to sites designated for stocking. A visit to the hatchery will acquaint you with the entire process, and give you the chance to see some rare or big fish. Lost Valley Fish Hatchery is open to visitors year-round, except for Thanksgiving, Christmas and New Year's Day, but it is closed on Sundays and Mondays from Labor Day until April 30.

PHOTOS: CLIFF WHITE



## A Quiet Turnover

*Cooling temperatures prompt a gentle mixing of our waters.*

Most swimmers know that during summer the warmest water of lakes and ponds is near the surface. The deeper they dive, the cooler the water. The reason is that water becomes less dense as its temperature increases, so that the sun-warmed water literally floats on the top of a lake or pond. As summer progresses, a well-defined band of rapid temperature change called a thermocline forms in lakes and ponds. The band prevents the nutrient- and oxygen-rich water near the surface from mixing with the cooler, and increasingly oxygen-poor water below.

As the surface water cools in the fall, however, it becomes less dense — heavier — than the water beneath and sinks. Wind agitating the water accelerates this process, but the shortening days and cooling temperatures make the turnover relentless. Eventually the thermocline dissolves, leaving the temperature and oxygen profile of the lake fairly consistent and setting the stage for a reversal in which the coolest water is at the surface. This occurs because water is most dense at 39 degrees, which explains why lakes freeze at the top rather than the bottom.



## Migration Season

*Their bags are packed, and they're ready to go.*

Grab those binoculars and bird guides. September is the peak of the migration season for many species. Hummingbirds and warblers have been passing through Missouri for weeks now and will continue to be birders' targets well into September. Ospreys are also on the move; look for them flying over rivers and lakes as they hunt or fish. Dabbling ducks, shorebirds, nighthawks, several species of swallows and broad-winged hawks are also on the move. Visit Squaw Creek and Swan Lake national wildlife refuges to view congregations of white pelicans and astoundingly large and noisy flocks of ducks and geese.

## NATIVE BEAUTY



Cardinal flower

## Cardinal Flower

HUMMINGBIRDS AND HUMANS share a delight in cardinal flowers (*Lobelia cardinalis*.) These native plants line many Missouri streams, ponds and wetlands. In late summer they explode into spikes of brilliant red or scarlet flowers. These attract hummingbirds at a time when they need fuel for their southern migration. Although cardinal flowers are a good source of nectar, all parts of the plant are considered toxic. Curiously, the attractive flowers produce no floral scent.

Cardinal flowers are not tulips, but they are two-lipped. The lower lip has three prominent lobes, while the upper lip has two. A prominent tube extends beyond the lips and ends in the blue to grayish white reproductive parts that seem to nod. The flowers form a spike at the top of a 3–4 foot, ridged stalk that grows from a basal rosette. The leaves below the flowers are long and narrow with serrated edges. They are rough to the touch and have hairy undersides. They tend to cup or curl upward from their central vein.

Cardinal flowers are a great choice for butterfly gardens and for planting around ponds. To learn more about landscaping with “native beauties,” order *Tried and True Missouri Native Plants for Your Yard* for \$6, plus shipping and handling, from [www.mdcnatureshop.com](http://www.mdcnatureshop.com), 877-521-8632, or pick up a copy at an MDC office with a Nature Shop.



NEXTGEN

## Help Hellbenders

*Report sightings of these endangered salamanders*

Hellbenders, North America's largest salamanders, begin life in Ozark streams as silvery-white eggs the size of nickels or quarters. Young hellbenders have external gills, which they lose at about two years of age. They can live 30 years and grow to more than 20 inches. Their splotchy, wrinkled skin and beady eyes give them a weird look, but they are completely harmless and endangered. If you see a hellbender, call 573-522-4115, ext. 3201, and report its exact location, using landmarks if possible. The date of the sighting and the animal's approximate length are important, too. For more information, download [www.MissouriConservation.org/170](http://www.MissouriConservation.org/170).



## Little Fish in the Big Muddy

*Their importance far outstrips their size.*

When people think of fish in the Missouri River, they tend to think big – blue catfish, paddlefish and sturgeon. However, more than 50 of the Big Muddy's finny species are smaller than your hand. Without them, the bigger fish would disappear. Smaller residents of the big river include the familiar bluegill, white bass, crappie and bullheads. Also familiar — as bait for crappie and other game fish — are the fathead minnow and golden

shiner. Few Missourians have ever heard of the goldeye, sicklefin or sturgeon chub. This is partly because these Missouri River residents are relatively rare and go about their business quietly. That business involves converting tiny, sometimes microscopic, food into chunks of flesh and bone big enough to make meals for large fish, such as sauger, sturgeon and catfish, not to mention raccoons, otters, minks and birds, including herons, pelicans, diving ducks and terns. Silver and bighead carp and other exotic fish pose threats to the natural food chain, because they compete with native fish for food and quickly grow too large for many predators.

## Stream Team



### *Stream Team Celebrates 20th Birthday*

WHEN VISIONARY CONSERVATION Commissioner G. Andy Runge conceived the notion of a voluntary, citizen-directed stream-conservation movement, he could hardly have imagined how wildly it would succeed. Since the Roubidoux Fly Fishers became Stream Team No. 1 early in 1989, the program has grown to more than 4,000 teams with 80,000-plus individual members. On June 13 and 14, Stream Teamers from across the state gathered in Waynesville to celebrate their triumph. They recognized outstanding supporters, received accolades from Conservation Department Director John Hoskins and other dignitaries, networked to increase their effectiveness, roasted a whole hog, floated the Big Piney River and still found time to conduct water-quality monitoring and pick up nearly half a ton of trash from Roubidoux Creek. One celebrant summarized the experience, saying, "We are all family." To sprout your own branch in this family or join an existing one, call 573-522-4115, ext. 3591, or visit [www.mostreamteam.org](http://www.mostreamteam.org).

**Stream Team:** Missouri Stream Team

**Formed:** Feb. 1, 1989

**Location:** Statewide

**For more info about Stream Teams:** [www.mostreamteam.org](http://www.mostreamteam.org)

PHOTOS: DAVID STONNER



## Our Glorious Forests

WOODSON K. WOODS CA



**Size:** 5,661 acres

**Location:** Southeast of St. James on Highway 8.

**Highlights:** This area is mostly forest with access to Dry Fork Creek and the Meramec River.

**Find more info:** [www.MissouriConservation.org/a7103](http://www.MissouriConservation.org/a7103)



THANKS IN PART to its forest management, Woodson K. Woods Memorial Conservation Area is one of the most beautiful state-owned properties in Missouri. The area consists of 5,661 acres in Crawford and Phelps counties, where the Meramec River and Dry Fork Creek and their tributaries have cut scenic valleys through the area's rugged Ozark hills. The area is managed to provide food, cover and water for wildlife and to maintain a healthy forest. Deer, turkey, squirrel, rabbit, quail, great blue herons, eagles, doves and many other wildlife species frequent the area, 80 percent of which is forested. Fishing opportunities abound. Anglers can pursue rainbow and brown trout in the cool waters of the Meramec River, as well as bluegill, catfish, largemouth bass and other warm-water species in the slow, murky waters of Dry Fork Creek. Start your tour of Missouri's fall color with a visit to this glorious forest.

## Arbor Day Contest

*Fifth-grade teachers receive contest packets next month.*

Time for Missouri's fifth-graders to prepare for the 2010 Arbor Day Poster Contest. The theme is "Trees are Terrific . . . and Energy Wise!" Winners receive a \$50 savings bond. Each school's winning poster advances to the statewide competition, and the state winner advances to the national level. The state entry deadline is Feb. 11, 2010. Fifth-grade teachers can find more information at [www.MissouriConservation.org/19619](http://www.MissouriConservation.org/19619), or write Donna Baldwin at PO Box 180, Jefferson City, MO 65102, or e-mail her at [donna.baldwin@mdc.mo.gov](mailto:donna.baldwin@mdc.mo.gov).



## Winter Tree Care

*Key times to water your trees before and during winter.*

A "typical" Missouri winter can deliver extremes in temperature and moisture. A good watering regime can help your trees and shrubs survive winter's excesses. Starting in September, provide some water, but not too much, to stimulate late season growth. In October and November, after leaf drop on deciduous trees but before the ground freezes, water shrubs and trees deeply. Keep an eye on the weather, and if it turns warm and dry, consider watering your evergreens. This practice helps keep evergreen needles from drying out and turning brown. To protect trees against excessive snow and rain, do what you can to promote drainage, including avoiding mulching too deeply. For more tips on putting your landscape to bed for the winter, visit [www.MissouriConservation.org/20247](http://www.MissouriConservation.org/20247).





NextGEN

## Protect Water, Livestock

*Cost-share to help you keep cattle out of streams*

Letting cattle continually graze stream banks seems like an easy way to water them, but over time, stream-bank grazing can threaten animal health and degrade



water quality and wildlife habitat. Streamside fencing keeps cattle off banks, and prevents them from becoming mired in mud or drowning. Get cost-share for alternative

watering and fencing through federal programs such as the Conservation Reserve Program, Environmental Quality Incentives Program and Wildlife Habitat Incentives Program. Call your local USDA service center for more information.

## It Pays to Buffer Streams

*Incentives help landowners conserve stream banks.*

Buffering streams with grasses, shrubs and trees helps banks stay solid during flooding. Stream buffers also keep water cleaner and cooler, and they improve wildlife habitat. Several practices within the farm bill's Conservation Reserve Program help landowners bear the cost of buffering streams. Conservation practices 21, 22, 29 and 30, for example, all provide a sign-up incentive of \$100 per acre as well as additional cost-share incentives for stream buffer practices. In addition, conservation practice 31, also known as "bottomland timber," provides incentives for enrolling entire creek bottoms into the program. All Conservation Reserve Program stream buffer



contracts run from 10–15 years. Call your local USDA service center to see if your land qualifies for Conservation Reserve Program stream buffer practices.

## Clean Water, Fat Cows

## On the Ground



Mike Bottom on his land in Crawford County.

CRAWFORD COUNTY LANDOWNER Mike Bottom and his wife, daughter and son-in-law, run a cow-calf operation in the Lower Bourbeuse Conservation Opportunity Area. The COA's manager, Kenda Flores, applauds the Bottoms' work, which is supported in part by Missouri Conservation Heritage Foundation funds. "Mike's combination of livestock and wildlife practices is unparalleled," Kenda says. "He's done a great job with wildlife borders, and he and his family have established an extensive corridor of trees along Brush Creek."

Mike is equally pleased with the program. "I've been involved in conservation for years, but the current work the Department is doing on streams has just been amazing."

Mike urges other Brush Creek-area landowners to get involved. "Contrary to popular myth, you don't have to give up your private property rights if you participate in conservation cost-share programs — and the benefits are significant."

Call your regional office to find out more (see Page 3 for phone numbers).

PHOTO: DAVID STONNER; ART: MARK RAITHEL



## Help Students Target Success

Get a Missouri NASP going at your school.

Whether you're a parent, educator or administrator, you'll appreciate the Missouri National Archery in the Schools Program for its ability to build stronger, more confident and accomplished kids. To help get this popular program going at your school, the Department of Conservation, in partnership with the Conservation Federation of Missouri, provides instructor training and grant funds for acquiring official National Archery in the Schools equipment. Contact your local Department outdoor skills specialist at [www.MissouriConservation.org](http://www.MissouriConservation.org)/8820 to schedule your instructor training and to learn more about the \$500 equipment grant. For more information about program benefits, visit [www.MissouriConservation.org](http://www.MissouriConservation.org)/16066.



## NATURE ACTIVITY



NATURE ACTIVITY: CLIFF WHITE; NASP: DAVID STONNER

### Lewis & Clark Big Event



WHAT DID LEWIS and Clark and the Corps of Discovery see, hear, smell, taste and feel as they explored the Missouri River corridor from 1803–1806? Relive some of their experiences at the Discovery

Center's Lewis and Clark Big Event, Saturday, Sept. 19 from 10 a.m.–3 p.m. This full day of hands-on activities, exhibits, performances and family-friendly crafts will keep you entertained and enthralled with sights, sounds, fragrances, tastes and textures from Missouri's past and present. Activity highlights include exploring a gravel bar by dugout canoe, throwing a tomahawk and watching members of the Corps of Discovery in costume as you enjoy toe-tapping live music from the Fiddling Frenchman. You'll also have the opportunity to taste wild fruits and nuts and "meet" Sergeant Patrick Gass, who was carpenter on the expedition. Call the Discovery Center for a full listing of program activities.

**Where:** Discovery Center, 4750 Troost Ave., Kansas City, Mo.

**When:** Saturday, Sept. 19 from 10 a.m.–3 p.m.

**Who should attend:** All are welcome; no registration is required.

**For more info:** Call 816-759-7300



# Majestic Monarchs

The “king” of butterflies gets a close-up.

photos by NOPPADOL PAOTHONG

The monarch butterfly (*Danaus plexippus*) is perhaps the most recognized butterfly in Missouri, and rightly so. It is a beautiful creature with a fascinating life cycle.

Many of the monarchs we see this time of year in Missouri are part of the massive southward migration of monarchs to their winter sanctuaries in Mexico (track their migration at [www.learner.org/jnorth/monarch](http://www.learner.org/jnorth/monarch)). Though monarchs produce several broods during the summer and fall months, it is the final fall generation that makes the arduous cross-country trip. This generation will live longer than the others — 7 to 8 months rather than the typical 4 to 5 weeks. These same butterflies will return to the southern U.S. in the spring. Their shorter-lived offspring will continue migrating northward over subsequent generations.

An equally fascinating aspect of the monarch is the transformation that takes place when the caterpillar becomes an adult butterfly. This process, known as metamorphosis, is not unique to monarchs, but is nonetheless a stunning display.

These pictures by Noppadol Paothong, Conservation Department wildlife photographer, display the remarkable life cycle of the monarch butterfly.

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Monarch caterpillars are very tiny when they first hatch from the egg. The adult female monarch butterfly lays its eggs on the underside of milkweed leaves. When the caterpillar hatches, it feeds almost continuously on the milkweed for about two weeks while it grows to a full size of about 2 inches long. When the caterpillar is full grown (seen left), it usually leaves the milkweed plant in search of a safe place to pupate.



When the caterpillar is ready to pupate, it attaches itself to a branch or other similar anchor by making a silk-like pad. The caterpillar hangs upside down from this pad by its last pair of legs in a J-shape.



After hanging in a J-shape for about a day, the caterpillar begins to shed its skin for the fifth and last time. Previous sheddings allowed the caterpillar to grow bigger. This time, the caterpillar sheds its skin to reveal a green casing called a chrysalis. As the skin is pushed to the bottom of the body, the cremaster appears. This spiny appendage attaches the chrysalis to the silk pad. This whole process happens in as little as 60 seconds.



The chrysalis is very soft at first, but within an hour it hardens into a protective shell. Inside this casing a dramatic transformation takes place. Wings are formed and chewing mouthparts are replaced with a straw-like tongue, or proboscis, that the adult butterfly uses to sip nectar. Tissue, limbs and organs are all changed during this process. The beginnings of different body parts of the adult butterfly can be recognized in the chrysalis itself. The large, leaf-like flaps at the bottom become the wings, and the upper, ridged, portion defines the thorax.





In about two weeks the chrysalis will start becoming transparent, revealing the orange and black wings of the newly formed butterfly.

Once the monarch has completed its transformation, the chrysalis will suddenly crack open, and the fully formed monarch butterfly will crawl out in as little as 30 seconds. The butterfly's wings are wet and crumpled when it emerges. The monarch is very vulnerable to predators at this stage, as it cannot fly. It clings to the empty chrysalis and pumps a blood-like substance through its wings to enlarge and strengthen them.



After about an hour, the monarch's wings are dry and ready for flying. In about a week the Monarch will be mature enough to reproduce and begin the life cycle of the next generation.







# Every Cog & Wheel

Missouri's Natural Heritage Program tracks our rare plant and animal treasures and their habitats.

by TIM SMITH *and* DOROTHY BUTLER

**E**very plant and animal species native to our state is valuable. Each plays an important role in maintaining a healthy and diverse environment. Many of these species are also important for economic or aesthetic reasons—or could be in the future. For example, more than one-fourth of all prescription drugs today have plant origins. Our native species could hold medical or economic values that we have not yet discovered. For conservationists to sustain our rare species, they must first know their status and distribution and be able to identify the natural habitats on which they depend.

Since 1981, the Conservation Department has tracked occurrences of rare species and outstanding natural habitats through the Missouri Natural Heritage Program. The program is our state's unit of a national network. The network, called NatureServe, links individual state programs, assuring that consistent methods are used so that nationwide analysis can be done with the collected data. A species' range usually extends over several states, so the bigger picture is necessary to assess each species' overall status. Records are kept on each known occurrence of a tracked species or habitat. Each rare or threatened species receives a range-wide ranking, based on rarity and threats, as well as a state ranking from each state in which it occurs.

## The Trackers

Records of occurrences come from a variety of sources. These include professional biologists at state, federal and private agencies; knowledgeable amateurs; private landowners; and museum specimens that may have been collected recently or as long ago as the early 1800s. What constitutes a record varies with the type of organism. For plants, the sighting of one individual constitutes a record. For some birds, a record requires evidence of nesting; the

same bird species, passing through Missouri on migration, would not justify a record.

Biologists review all records to assure the accuracy of identification and the uniformity of the data. They also determine which species and habitats should be tracked. Species are added to or deleted from the tracking checklist as new information becomes available on their status in Missouri. The tracking list is updated and annually reprinted to allow scientists working here to



JIM RATHERT

## Rare Missouri plant benefits from power line project

Missouri bladderpod (*Physaria filiformis*) is a small, yellow-flowered plant in the mustard family. It grows only on rocky, limestone-derived soils in southwest Missouri as well as in a few areas of Arkansas. When a project is planned in the area with known records of bladderpod, the species is identified as possibly occurring there, if suitable habitat exists. When a federal power administration office planned brush-control maintenance of its power line easement several years ago, planners requested Natural Heritage information for their right-of-way. No records for bladderpod

were known from the right-of-way, but, because the route fell within the Missouri bladderpod area of concern, the species was brought to the agency's attention and its habitat was described. Review of aerial photography of the power line right-of-way led to the identification of several areas of possibly suitable habitat. When checked by ground surveys, a previously-unknown site for the then federally-endangered species was discovered. Maintenance for that site was tailored to benefit the bladderpod, whereas traditional methods could be used for the remaining right-of-way. A new site was discovered and protected due to the appropriate use of the Natural Heritage Program information.

know which species are considered rare, and for which ones we are seeking data on occurrences. Currently, the Natural Heritage Program tracks 27 lichen species, 614 plant species, 398 animal species and 86 natural habitat types. This includes the 67 species in Missouri that are protected as endangered by the *Missouri Wildlife Code* and the 36 species that are listed, or are candidates for listing, as threatened or endangered by the U.S. Fish and Wildlife Service. For a complete list, download a PDF at [www.MissouriConservation.org/145](http://www.MissouriConservation.org/145).

### The Data at Work

On the other side of the ledger, data goes out through a number of channels. Through the environmental review process, construction project managers may request information to determine if species of special concern have been documented near the project site. For example, a pipeline company may propose a potential route for a new pipeline. The Department's review of the route will allow builders to avoid some sites or choose a more appropriate time or construction technique to avoid damage to rare species or habitats.

When conflicts are identified early in the planning process, the damage to rare species can often be avoided or minimized and the development proceeds without delays. Currently, projects requesting environmental review number about 2,700 each year. In addition to identifying possible conflicts with rare species or habitats, the Department may respond by including a number of best management practices related to a particular activity. These guidelines could help minimize erosion and other harmful environmental effects. In some cases, simply adjusting the timing of a project can avoid problems. Work near a cave entrance can be conducted during the months when threatened bats are not using the cave. Work at a site with rare annual plants can be done after the plants' seeds have already been produced.

To receive a heritage review, project planners can contact the Policy Coordination unit located in the Department's headquarters (see Page 3) or visit [www.MissouriConservation.org/10308](http://www.MissouriConservation.org/10308) for more information.

The Department uses the Natural Heritage data to assure that its own land management and construction projects are not displacing rare species. Knowing where pockets of biodiversity are located, planned developments have been relocated to avoid harming them. Land management has been redirected to improve the prospects for particular rare species, once they are known to occur on a tract. Other state agencies as well as the Mark Twain National Forest and national wildlife refuges use the Natural Heritage data in a similar manner. The data are

### Serving Nature & You

A strategic goal of the Conservation Department, as well as its constitutional mandate, requires us to conserve the state's plants and animals and their habitats. A public opinion survey conducted in 2003 indicated that 79 percent of Missourians agree that the Department should conserve and restore rare and endangered plants. The rarest and most threatened of these resources are the ones in greatest need of protection. The goal is to maintain Missouri's rich biological diversity, from the most obscure cavesnail to our impressive national symbol, the bald eagle. The myriad plant and animal species in our care occur within, and depend upon, a variety of habitats, including prairies, forests, woodlands, glades, cliffs, caves, streams and wetlands. The Missouri Natural Heritage Program allows us to identify what is rare, where those rare elements are located, and what our options are for maintaining these unique pieces of our natural history.

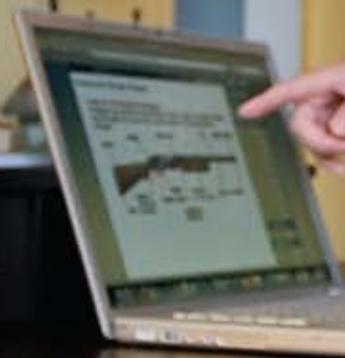


JEFF BRIGGLER

**The Illinois chorus frog, an imperiled amphibian of sandy-soiled sites in Southeast Missouri, is protected by scheduling road ditch maintenance for periods outside of the animals' breeding season.**

also used to recommend public and private lands for voluntary designation as state natural areas, to perpetuate the character of Missouri's native landscapes.

While we don't completely understand the roles of many species in Missouri's landscapes, it would be foolish to allow our use of the land to eliminate them. As Aldo Leopold, the father of wildlife management in the U.S., said, "To keep every cog and wheel is the first precaution of intelligent tinkering." Both the rare species and some of their remaining intact habitats must be protected if we are to pass on our state's natural heritage to successive generations. ▲





# ONBOARD *for* ONLINE

Busy students can now study for **Hunter Education Certification** through the Internet.

*by* TONY L. LEGG, *photos by* CLIFF WHITE

**H**unter Education has a long and praised past in Missouri. The courses began in 1957 as voluntary safety programs in communities and were often held at local schools. In the 1980s, Hunter Education developed into a complete hunting education program. In addition to hunting and firearms

safety, students learned about responsibility to other hunters, land, wildlife and landowners; landowner relations; wildlife management and habitats; conservation; survival and first aid; game care; shooting range safety; Missouri laws; and other related issues. However, until 2008, the only way to receive hunter education was to attend a minimum 10-hour, multi-day class in the community or at one of the few local schools that still offered the program.

Sometime around 2000, public requests began — and continued to grow — for an alternate way to receive Hunter Education Certification. Potential students told us that they didn't want to spend days in a classroom, or have to travel, or take time away from family

**Nikole Jeanne Cronk (right) answers questions during the hands-on field day she attended in association with her online training. She says she learned new rifle-handling techniques thanks to the field day. "This was very valuable."**



or work. The Conservation Department began looking at alternatives. One promising option was the Internet.

The Internet was already a proven education tool for the U.S. military, law enforcement, colleges, universities, industries and a host of other groups. In 2006, the Department started working with Kalkomey Enterprises, Inc., a leader in online education, and began piloting online hunter education training in select areas around the state.

### Online Pilot

Students were recruited at various locations to take the online training and provide feedback. They reported on the amount of time the course took, problems they encountered, what they thought should be improved, and a host of other questions. The Department then went to its cadre of instructors and recruited staff and volunteers to organize and conduct a field day in association with the online training. These instructors were also asked to provide feedback and detailed information on their experiences and to make recommendations to improve the program.

Pilots were conducted in three different phases and many improvements were made along the way. At the end of 2007, all testing and piloting was completed.

The response to the online program was overwhelmingly positive. Students said they liked studying at their own pace and at their own convenience. They thought the hands-on field days were fun and that they brought all the online study together. Instructors were also impressed. Compared to traditional classes, where many students walk in as blank slates, these students were knowledgeable and well prepared, so the hands-on reviews and exercises went smoothly and were fun as well as educational. Instructors were so impressed with the techniques they learned and the experiences they had, that they planned to incorporate many of the techniques into their traditional classes as well. As a result, on July 1, 2008, the Conservation Department launched its online-supported Hunter Education training program.

### Digital Launch

Launched in July, just months before Missouri's major hunting seasons began—including dove,



**Cronk hunted deer with her boyfriend after completing her training. “On the afternoon of the second day we saw two small does make their way out of some trees in our direction,” says Cronk. “As they approached, I was able to line one up and made a good shot. It was a very exciting, rewarding and ultimately tasty experience.”**

waterfowl, and deer seasons—the program saw a good initial rush through November. Traffic slowed a bit in April, but we expect to see numbers increase again when we close in on fall hunting seasons. While the online program has drawn students of all ages, most so far have been older than 20 years of age, with many in their 30s and 40s. The main drive for these folks seems to be convenience; working adults with limited time are eager to use this alternate program. Currently, the number of individuals taking advantage of the program limits the number of field days and locations we can offer. However, as participants increase, we expect to add more dates and locations.

### How it Works

Anyone can go to the Web site maintained for the Conservation Department by Kalkomey Enterprises, Inc., and study, review and research information—totally free. There you will find the same materials from the student



During the Field Day, Allan Anderson and his sister Kelsey look at a shotgun to determine if the shells they have been given can safely be fired from that gun. "I actually didn't know how to recognize shotgun shells besides looking at the box you bought them in before this class," says Allan. "That's a very crucial thing to know when you go hunting, so I'm glad that I learned that!"

guide used in our traditional classroom Hunter Education course.

An added benefit of this program is that it provides additional education resources for all Missouri citizens. Parents, especially, can choose to research hunting, safety and other information to make an informed decision about whether hunting is an appropriate activity for their child, or to start reviewing hunting safety before formal training. It is also a great resource for students preparing to take a traditional classroom course. Current hunters can review and get information on changes and broader issues with hunting and firearms. School students, scouts and parents can research information for study, reports, projects, etc.

The online version is in a slightly different format that is more conducive to viewing online, with Flash animation, graphics to hold your attention and make it fun, and chapter reviews

and practice tests. You can study at your own pace and wherever you'd like. All you need is access to the Internet; no special software is required. When a student is ready to complete the program and receive Hunter Education Certification, he or she must take and pass the Field Day Qualifier Test online and then attend a single Field Day (approximately 5 hours).

Before taking the Field Day Qualifier Test, you can take as many practice tests as you need for free. The Field Day Qualifier Test is made up of 75 questions chosen from a bank of about 2,500, so no two tests or retests are the same. To find out the results of your test you will be required to pay \$15 by credit card. This charge goes directly to Kalkomey Enterprises to offset the costs of developing, maintaining, updating, data processing and providing customer service for online program. The Conservation Department receives no monies from the charge and still offers the free traditional Hunter Education classes for those not wishing to pay the fee.

After passing the Field Qualifier Test with at least an 80 percent and paying the fee, you will be asked to create your own personal account to register for your Field Day. This account will allow you to update and change your field registration. You have one year from the date you pass the online Field Day Qualifier Test to attend and pass a Field Day.

The Field Day is set up to test the application of Hunter Education skills not provided through the online portion of the course. It consists of approximately three hours of hands-on review and exercises of related tasks. Many of the skills reviewed relate to past hunting incidents or issues and need in-depth coverage to ensure comprehension. Students will then take a 50-question test on items from both the field day review and the online portion. The final test is 10 pass/fail practical application stations where the individual must explain and demonstrate proper application of a task. Students must achieve an 80 percent on each of these last two tests to be eligible for certification.

### Benefits of Certification

Graduates of the online Hunter Education course receive the same certification as students who attend the traditional classroom

course. They will receive a 120-day temporary certification certificate and Missouri Hunter Education graduate patch to take with them when they leave. All online and traditional students also receive (within 120 days): 1) A new hunter starter kit, which includes a DVD, hunting and safety literature, Hunter Journal with free entry card for a hunt of a lifetime and other gifts, plus additional items, and 2) A new Missouri Conservation Heritage Card that will have their Hunter Education number and information on it for faster hunting or fishing permit purchases and discounts at MDC Nature Shops or for online MDC Nature Shop orders.

So if you, or someone you know, is looking for an alternate way to get Hunter Education Certification for upcoming seasons that is convenient, fun and easy, or just looking for more information on hunting, wildlife and conservation and safety, visit [www.MissouriConservation.org/17844](http://www.MissouriConservation.org/17844). ▲

**Allen and Kelsey Anderson went deer hunting with their father, Richard, after completing the online training. "One thing I loved about the online course was the visual aids," says Kelsey. "An especially effective tool would have to be the interactive animations, including how a firearm works. For those who don't know or understand a topic, the animations provide helpful, one-on-one information."**



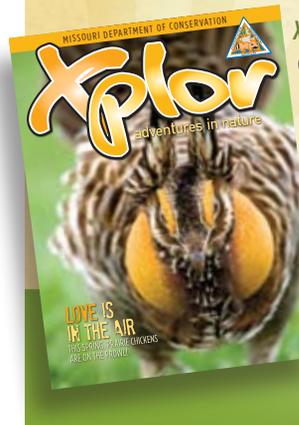
# Hunting and Fishing Calendar

FISHING	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i> )	5/23/09	2/28/10
impoundments and other streams year-round		
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/09	10/31/09
Trout Parks	3/1/09	10/31/09
HUNTING	OPEN	CLOSE
Coyotes	5/11/09	3/31/10
Crow	11/1/09	3/3/10
Deer		
Firearms		
Urban	10/9/09	10/12/09
Youth	10/31/09	11/1/09
	1/2/10	1/3/10
November	11/14/09	11/24/09
Antlerless	11/25/09	12/6/09
Muzzleloader	12/19/09	12/29/09
Archery		
	9/15/09	11/13/09
	11/25/09	1/15/10
Doves	9/1/09	11/9/09
Furbearers	11/15/09	1/31/10
Groundhog	5/11/09	12/15/09
Pheasant		
Youth (North Zone only)	10/24/09	10/25/09
North Zone	11/1/09	1/15/10
Southeast Zone	12/1/09	12/12/09
Quail	11/1/09	1/15/10
Youth	10/24/09	10/25/09
Rabbits	10/1/09	2/15/10
Rails (Sora and Virginia)	9/1/09	11/9/09
Ruffed grouse	10/15/09	1/15/10
Squirrels	5/23/09	2/15/10
Teal	9/12/09	9/27/09
Turkey		
Firearms		
Fall	10/1/09	10/31/09
Archery		
	9/15/09	11/13/09
	11/25/09	1/15/10
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see <a href="http://www.missouriconservation.org/7573">www.missouriconservation.org/7573</a>	
Wilson's (common) snipe	9/1/09	12/16/09
Woodcock	10/15/09	11/28/09
TRAPPING	OPEN	CLOSE
Beaver & Nutria	11/15/09	3/31/10
Furbearers	11/15/09	3/3/10
Otter & Muskrats	11/15/09	see <i>Wildlife Code</i>

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit [www.MissouriConservation.org/8707](http://www.MissouriConservation.org/8707) or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to [www.wildlifelicense.com/mo/](http://www.wildlifelicense.com/mo/).

# New Kids' Magazine



XPLOR will ignite children's curiosity unlike any other nature magazine. Six times a year we'll bring you eye-popping art, photos and stories about Missouri's coolest critters, niftiest natural places, liveliest outdoor activities and people who've made a living in the wild. Don't keep the door closed another minute. Come outside with us and XPLOR!

**SIGN UP NOW!**

The first magazine will be delivered in February 2010.  
[www.MissouriConservation.org/15287](http://www.MissouriConservation.org/15287)  
 573-522-4115, ext. 3856 or 3249

## Contributors



DOROTHY BUTLER has been the Conservation Department's natural heritage coordinator since 1993. She lives on 15 acres in Cole County and is working to establish native prairie on 2.5 of those acres. She enjoys reading, weaving and hiking with her dogs.

TONY LEGG grew up in the woods, streams and lakes around Phelps County and became an avid hunter and angler. An Air Force competitive shooter/coach, instructor and range specialist for 24 years, he now enjoys teaching outdoor and shooting skills around the state and spending time shooting with family and friends.



NOPPADOL PAOTHONG discovered his passion for wildlife photography in college in 1995. Born in Thailand, he came to the U.S. in 1993 to study graphic arts before switching to journalism. When not traveling and photographing, he enjoys time at home cooking. He, his wife, and their two golden retrievers live in Columbia.

TIM SMITH, currently the Department's ombudsman, served as the natural heritage program botanist for 18 years. He is proud of Missouri's network of contributors to that program, who are helping to protect the state's biological diversity. Tim and his wife, Leah, live in Jefferson City with their children Anna and Henry.



## AGENT NOTES

*Pre-season scouting can pay off!*

MANY HUNTERS ARE looking for an “edge” so they can harvest a trophy deer. Pre-season scouting may be the “edge” most hunters need to find success.

Scouting should be focused on a few fundamental elements: what and where are the food and water sources, how the deer travel to and from these food sources (ridge tops, river bottoms and timbered fence rows) and the location of the bedding areas. Knowing these basic aspects will help with understanding the movement patterns of deer.



Older mature deer are cautious and typically enter feeding areas after other deer have entered and established that the area is safe. For this reason, it’s important to know where the deer are entering and exiting these areas. Early season hunting is a great time to set up on the edges of the hunting area and observe. Once you know where the deer are entering and exiting the area, it’s time to move in. Look for a natural “funnel” (downed trees, rock outcropping, or creek banks and ditches) that force the deer to travel along certain trails to and from the feeding area.

Be careful. Too much human activity and disturbance will pressure the deer to want to leave the area, especially during the season. If you need to re-scout and move the set up during the season, try to limit your scouting and movements to the late-morning and early afternoon hours.



Eric Abbott is the conservation agent for Atchison County, which is in the Northwest Region. If you would like to contact the agent for your county, phone your regional Conservation office listed on Page 3.

## DON'T MOVE FIREWOOD!



To help contain Missouri’s emerald ash borer infestation, cut or buy firewood from local sources, and use it as close to its point of origin as possible. You can learn more about how to control the spread of emerald ash borer at [www.MissouriConservation.org/10985](http://www.MissouriConservation.org/10985).

## WHAT IS IT?

### Mushroom

On the back cover and right is a peppery milky mushroom (*Lactarius piperatus*) by Noppadol Paothong. The peppery milky is in season from July through September, grows up to 3 ¼ inches tall and the cap grows up to 6 inches wide. While this mushroom is not considered poisonous, its bitter taste makes it undesirable table fare. Mushrooms of the *Lactarius* species will secrete a latex, milky substance from any bruise or cut and especially from the gills. To learn more about mushrooms in Missouri, visit [www.MissouriConservation.org/8360](http://www.MissouriConservation.org/8360).



# WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on the inside of this back cover.



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